

=IF(logical\_test,value\_if\_true,value\_if\_false)

Excel also includes 18 *information functions*, which give you information about cells, worksheets, and your system itself. For the most part, you'll use these functions to build error-handling and data-validation routines into a worksheet. Nine of these functions belong in a subgroup called the IS functions: ISTEXT, ISERROR, ISNUMBER, and so on.

By combining the IF function and the ISERROR function, you can avoid seeing error codes in a worksheet. The formula =IF(ISERROR(A5/A8),"",A5/A8), for example, tests the value of the formula A5/A8 before displaying a result. If A8 is equal to 0, Excel displays nothing in the cell rather than the annoying #DIV/0! error message; if the value of A8 is other than 0 and the formula returns a valid result rather than an error message, Excel displays that result.

#### TIP FROM

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In many cases, *conditional formatting* is a better way to suppress error messages than using formulas. Select the cell in which you want to suppress error messages—A9, for instance—then click the Conditional Formatting button on your Home ribbon. Select Highlight Cell Rules and choose Equal To. In the edit box at the left, enter the formula =ISERROR(A9). Next, click the Format button, select Custom Format, and in the Format Cells dialog box choose the white square. Click OK to close the Format Cells dialog box and click OK to close the Condition Formatting dialog box. Now any error messages in that cell will appear as white text on a white background and will be invisible.

→ For a detailed discussion of conditional formatting, see "Using Conditional Formatting to Identify Key Values," p. 583.

## TEXT MANIPULATION FUNCTIONS

It's easy to think of functions in mathematical terms, but some of the most useful functions work strictly with text. You can use text functions to pull specific information from a single *text value*, split a text value into multiple cells, combine text values into a single string, or convert one type of data (such as a number or date) into text, using a specific format.

When you want to combine (or *concatenate*) the text from two cells, use an ampersand. The following formula adds a space between the values in two adjacent cells:

=A1&" "&A2

For more sophisticated manipulation of strings of text, use any of Excel's 27 text and data functions. These functions are especially useful when you've imported text from another program or file. Simple text functions let you convert text from all capitals to lowercase letters (and vice versa) or convert a date value to text in a specific format. The following formula, for example, combines three functions to pull out just the last name from a complete name in cell A17:

=RIGHT(A17,LEN(A17)-FIND(" ",A17))

The task isn't as easy as it might first appear. Because the last name can be any length (Bott or Leonhard, for example), you first need to calculate the correct number of characters. For starters, use the FIND function to locate the space separating the first and last names. If the

first name contains five letters, the formula `FIND(" ",A17)` returns the value 6. Next, use the `LEN` function to determine the total length of the name; by subtracting the value determined in the first step from this value, you can determine the exact length of the last name. Finally, use the `RIGHT` function to extract that number of characters from the input cell (A17), starting at the right side.

Table 20.1 lists the most useful text functions.

TABLE 20.1 COMMON TEXT FUNCTIONS

Function Name	Description	How to Use It
<b>CONCATENATE</b> <code>(text1, text2,...)</code> <b>UPPER</b> (text), <b>LOWER</b> (text), <b>PROPER</b> (text)	Combine two or more text items	Convert case of text, to all capitals, all lowercase letters, or initial capitals.  Generally, an ampersand (&) is easier. <code>=PROPER('pearson technology group')</code> changes the first letter of each word to a capital letter—in this case, Pearson Technology Group.
<b>FIND</b> (find_text, within_text,start_num) <b>SEARCH</b> (find_text, within_text,start_num) <b>LEFT</b> (text, num_chars) <b>RIGHT</b> (text, num_chars) <b>MID</b> (text,start_num, num_chars)	Find text in a cell Extract text from a cell	<b>FIND</b> is case sensitive; <b>SEARCH</b> allows wildcard characters. Use with <b>FIND</b> and <b>SEARCH</b> to extract part of a text string; for example, a part number from a lengthy product code.
<b>TEXT</b> (value,format_text) <b>FIXED</b> (number, decimals, no_commas) <b>DOLLAR</b> (number, decimals)	Convert number to text	For the <b>TEXT</b> function, specify any number format (except General) from the Category box on the Number tab in the Format Cells dialog box. Be sure to enclose the format in quotation marks: <code>=TEXT(TODAY(), "mmmm d,yyyy")</code> .
<b>CLEAN</b> () <b>TRIM</b> ()	Remove unwanted characters from text	<b>TRIM</b> removes extra spaces from imported text, and <b>CLEAN</b> removes unprintable characters, such as might be found at the top or bottom of a file that contains formatting information that Excel can't interpret.